

IN THE CLAIMS

Please replace all prior versions of the claims with the following claim set:

1-71. (cancelled)

72. (currently amended) ~~The method of claim 71, wherein the resin comprises A~~
method for forming a polymer foam, the method comprising combining

(a) an epoxy-based resin polymer resin capable of reacting with a curing agent to form the solid polymer binder of the polymer foam,
(b) a curing agent for the epoxy-based polymer resin comprising a waterborne polyamine, polyamide or polyamide-amine, and
(c) a chemical blowing agent comprising at least one sulfonyl hydrazide, and
allowing the mixture so made to form the polymer foam at a temperature of about 1° C to about 60° C.

73. (previously presented) The method of claim 72, wherein the mixture reacts to form a foam at a temperature of about 1° C to about 40° C.

74. (previously presented) The method of claim 73, wherein the mixture reacts to form a foam at a temperature of about 15° C to about 30° C.

75. (previously presented) The method of claim 72, wherein the epoxy-based resin is a bisphenol A type epoxy resin.

76. (previously presented) The method of claim 72, wherein the epoxy-based resin is a bisphenol F type epoxy resin.

77. (previously presented) The method of claim 72, wherein the curing agent comprises an adduct of a transaminated Mannich base.

78. (previously presented) The method of claim 72, wherein the curing agent comprises an emulsion of an epoxy adduct of a polyamine.

79. (previously presented) The method of claim 78, wherein the epoxy adduct comprises an epichlorhydrin adduct.

80. (previously presented) The method of claim 78, wherein the curing agent comprises an emulsion of an epoxy adduct of a polyamide-amine.

81. (previously presented) The method of claim 72, wherein the curing agent comprises an emulsion of an epoxy adduct, the epoxy adduct being the reaction product of a poly(alkylene oxide) momoamine or diamine and a di or polyepoxide, which is then reacted with a polyamine or a polyamide, or the reaction product of a poly(alkylene oxide) monoalcohol and a polyepoxide, which is then reacted with a polyamine or a polyamide.

82. (previously presented) The method of any of claim 72, wherein the at least one chemical blowing agent is p-toluenesulfonylhydrazide.

83. (previously presented) The method of any of claim 72,, wherein the at least one chemical blowing agent is p,p'-oxybis(benzenesulfonylhydrazide).

84. (previously presented) The method of claim 72, wherein the sulfonyl hydrazide blowing agent comprises about 0.01% to about 15% by weight of the sum of the weights of the blowing agent, the curing agent, and the binder.

85. (previously presented) The method of claim 84, wherein the sulfonyl hydrazide blowing agent comprises about 1% to about 10% of the sum of the weights of the blowing agent, the curing agent, and the binder.

86. (previously presented) The method of claim 84, wherein the curing agent comprises about 30% to about 70% by weight of the sum of the weights of the blowing agent, the curing agent, and the binder.

87. (previously presented) The method of claim 72, wherein the polymer resin is in the form of a latex when combined with the blowing agent and curing agent.

88. (previously presented) The method of claim 72, further comprising introducing at least one fire retardant into the foam.

89. (previously presented) The method of claim 88, wherein the fire retardant is selected from the group consisting of phosphates, endothermic fillers, char forming agents, tris(hydroxyethyl)isocyanurates, and polyfunctional alcohols.

90. (previously presented) The method of claim 72, further comprising introducing at least one low-density filler into the foam.

91. (previously presented) The method of claim 72, wherein

- (a) an epoxy-based resin.
- (b) about 40 to about 60 wt.% of a curing agent for the epoxy based resin comprising an emulsion of an epoxy adduct, the epoxy adduct being the reaction product of a poly(alkylene oxide) momoamine or diamine and a di or polyepoxide, which is then reacted with a polyamine or a polyamide, or the reaction product of a poly(alkylene oxide) monoalcohol and a polyepoxide, which is then reacted with a polyamine or a polyamide, and
- (c) about 1% to about 10% of at least one sulfonyl hydrazide chemical blowing agent, the percents being based on the combined weights of (a), (b) and (c),

are combined together and allowed to react at a temperature of about 1° C to about 40° C, thereby forming a foam at this temperature.

92. (previously presented) A foam produced by the method of claim 72.

93. (currently amended) The foam of claim 72 92, wherein the foam is formed by spraying a two-component mixture onto a substrate.

94. (previously presented) A fire resistant foam produced by the method of claim 88.

95. (previously presented) A method for forming an epoxy-based foam comprising reacting at least one epoxy-based resin, a curing agent for the epoxy-based resin comprising a waterborne polyamine, polyamide or polyamide-amine and a sulfonyl hydrazide chemical blowing agent at a temperature between about 1° C. and about 60° C. to form the epoxy-based foam at this temperature.

96. (previously presented) The method of claim 95, wherein reacting occurs at a temperature of about 1° C to about 40° C.

97. (previously presented) The method of claim 96, wherein reacting occurs at a temperature of about 15° C to about 30° C.

98. (previously presented) A waterborne foamable resin system comprising an epoxy-based resin, a sulfonyl hydrazide chemical blowing agent and a curing agent capable of curing the epoxy-based resin, the system containing sufficient curing agent to react with the sulfonyl hydrazide chemical blowing agent at a temperature of about 1° C to about 60° C thereby enabling the system to form a foam at this temperature.

99. (previously presented) The waterborne foamable resin system of claim 98, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 1° C to about 40° C.

100. (previously presented) The waterborne foamable resin system of claim 99, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 15° C to about 30° C.

101. (previously presented) The waterborne foamable resin system of claim 98 for producing a fire-resistant cured epoxy-based resin foam, the system containing sufficient curing agent to cure the epoxy-based resin and to react with the sulfonyl hydrazide chemical blowing agent at a temperature of about 1° C to about 60° C thereby enabling the system to form a foam at this temperature.

102. (previously presented) The waterborne foamable resin system of claim 101, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 1° C to about 40° C.

103. (previously presented) The waterborne foamable resin system of claim 102, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 15° C to about 30° C.

104. (previously presented) A foam comprising the reaction product of a sulfonyl hydrazide chemical blowing agent, an epoxy resin and a curing agent for the epoxy resin comprising a waterborne epoxy adduct of a polyamine, a polyamide or a polyamide-amine, the curing agent being present in an amount sufficient so that the curing agent can react with the

sulfonyl hydrazide chemical blowing agent at a temperature of about 1° C to about 60° C thereby enabling the foam to form a foam at this temperature.

105. (previously presented) The foam of claim 104, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 1° C to about 40° C.

106. (previously presented) The foam of claim 105, wherein the system contains sufficient curing agent so that the system forms a foam at a temperature of about 15° C to about 30° C.